



Montana Office of Public Instruction
Linda McCulloch, Superintendent
In-state toll free 1-888-231-9393
www.opi.mt.gov/IndianEd

Mathematics Lesson Plan

Buffalo Runner

Created by: Brenda Harrold

Grade 2: Lesson Duration 1 hour

Stage 1 Desired Results

Established Goals:

Montana Math Standard 5: Benchmarks 1-estimate, measure, and investigate length, capacity, weight, mass, area, volume, time and temperature & 2- develop the process of measuring and concepts related to units of measurement including standard and nonstandard units (English and metric).

Essential Understanding 1: There is a great diversity and uniqueness in language, culture, history and government among the 12 Montana Tribal nations.

Understandings:

1. Each tribe is unique in its culture, language and hunting rituals. (Blackfeet Tribe)
2. Vocabulary: (Blackfeet language)
buffalo jump cliff = piskun
buffalo runner = ahwa waki
raven = Omuk-may-sto

Essential Questions:

1. What was the job of the buffalo runner?
2. Why was it important for the buffalo runner to be fast?
3. What measurement would be best to use to measure how far you can run in 10 seconds?

Students will be able to...

1. Use a stopwatch to measure 10-second intervals.
2. Observe and mark the starting and stopping point of the runner.
3. Measure how fast they can run in 10 sec.

Students will know...

1. The importance of the buffalo runner's job.
2. How to determine who is the best for the buffalo runner position.
3. How to measure the distance between two points.
4. How to start/stop a stopwatch to measure 10 second intervals.

Stage 2 Assessment Evidence

Performance Tasks:

*Observation of students timing, running, and measuring.

*Measurement of student's 10-second run to the nearest foot.

Other Evidence:

*Compiling of students information and making a class bar graph.



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Continued

Stage 3 Learning Plan

Learning Activities:

1. Read aloud The Buffalo Jump written by Peter Roop and illustrated by Bill Farnsworth.
2. Discuss what units of measurement you would use to measure how far someone can run both long and short distances. If you haven't already measured out the string with one-foot intervals marked, you could have the students do that now. This takes a little longer, but will give them practice measuring in one-foot increments with a ruler and ownership in making their measuring string.
3. Demonstrate how to cooperatively measure distances by laying the 10-foot strings end to end and repeating the process over until you reach your measurement. Also demonstrate how to time the runners. If you don't have a stopwatch you can teach kids how to time by saying: 1--1000, 2—1000, ...up to...10--1000.
4. Divide the class into groups of three. They will each take turns being the “runner”, “timer”, and “referee”.
 - Mark off a starting line and have the “runner” line up behind the line.
 - The timer will give a signal to the runner to start and start the time.
 - The referee will follow the runner.
 - When 10 seconds are up the timer says or signals the runner to stop.
 - The referee marks off the spot the runner reached in 10 seconds.
 - The group then works together with their yarn to measure the distance of the runner.
 - The runner then writes down their name and the distance they ran in 10 seconds on a sticky note.
 - Repeat the process until everyone has ran and measured.
5. Collect the sticky notes and use them to make a bar graph on the board. You could extend this activity by showing the class average and/or mode.
6. Discuss who would be a good buffalo runner and why?

Teacher Notes:

Background knowledge: To start the drive a buffalo runner would wear a wolf or buffalo skin as a disguise. The buffalo runner would get the attention of the lead cow and try to lure it closer. The curiosity of the new animal would make the lead cow follow it bringing the herd with her. As the lead cow got closer the buffalo runner would begin to move quickly away. When the buffalo herd moved closer to the cliff, the buffalo runner would discard the calf robe and run or jump to safety. Additional runners circled in the back and sides of the herd to frighten them towards the cliff by shouting, waving arms, and shooting arrows. As the buffalo stampeded towards the cliff they could not stop the momentum and by the time they realized their demise, it was too late.

Materials/Resources Needed:

Background—(Blackfeet Tribes) Buffalo Tracks- Educational and Scientific Studies from Head-Smashed-In Buffalo Jump: <http://www.head-smashed-in.com/BufferoTracks.pdf>
This website has a virtual 360° view of the Head-Smashed-In Buffalo Jump.

**The Buffalo Jump**

written by Peter Roop
and illustrated by Bill Farnsworth

One ten-foot piece of string/yarn per student. Mark off 1-foot intervals with a piece of tape or a marker. This can be done either ahead of time or have students do it.

One-stop watch or timer (to the second) per group of three. You could also teach students how to count...1-1000, 2-1000, etc.)

Pack of sticky notes they would work best to make a graph later

Roll of tape or something to mark where the runner starts and stops

One pencil per group.

A large area for running and measuring 50-100 yards.